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10/663,316	09/15/2003	Paul S. Diefenbaugh	42P17654	1317

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EXAMINER

XIAO, KE

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/663,316	Applicant(s) DIEFENBAUGH ET AL.	
	Examiner Ke Xiao	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 3, 6, 13, 16, 33, 34, 43, 37, and 46 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2, 3, 6, 13, 16, 33, 34, 43, 37, and 46 recite the limitation "color brightness". There is insufficient antecedent basis for this limitation in the claim. In order to overcome this rejection, the examiner suggests that these limitations be changed to -- color luminance values --. For the purposes of prior art rejection, the claims will be interpreted as advised by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 7, 8, 11-14, 16-18, 21-25, 27-29, 51-54 and 56-58 are rejected under 35 U.S.C. 102(e) as being anticipated by Aleksic (US 2003/0210221).

Regarding independent **Claim 1**, Aleksic teaches a method comprising:
determining an ambient light level for an operating environment of a display device having an adjustable backlight to provide variable brightness (Aleksic, Fig. 4 elements 405, 436, 440, 445, Pg. 3 paragraph [0028]); and
modifying color luminance values corresponding to of one or more portions of an image to be displayed on the display deice based on the ambient light level (Aleksic, Pg. 3 paragraph [0029]).

Regarding independent **Claim 12**, Aleksic teaches a method comprising:
determining an ambient light level fro a display device having an adjustable backlight to provide variable backlight intensity (Aleksic, Fig. 4 elements 405, 436, 440, 445, Pg. 3 paragraph [0028]);

modifying the backlight intensity based on the ambient light level (Aleksic, Fig. 4 elements 405, 436, 440, 445, Pg. 3 paragraph [0028]); and

modifying color luminance values corresponding to one or more portions of an image to be displayed on the display device based on the modified intensity of the adjustable backlight (Aleksic, Pg. 3 paragraph [0029]).

Regarding independent **Claim 22**, Aleksic teaches an apparatus comprising:
an ambient light sensor to generate signals indicating a sensed ambient light level (Aleksic, Fig. 4 element 445);

a display device having an adjustable backlight source (Aleksic, Fig. 4 element 136 and 440); and

a graphics control device coupled with the ambient light sensor on the display device, the graphics control device to modify luminance values corresponding to one or more portions of an image and backlight intensity based on the sensed ambient light level (Aleksic, Fig. 4 element 440).

Regarding independent **Claim 51**, Aleksic teaches a system comprising:

a bus (Aleksic, Fig. 4 element 105);

an ambient light sensor coupled with the bus to generate signals indicating a sensed ambient light level (Aleksic, Fig. 4 element 445);

an input/output controller coupled with the bus (Aleksic, Fig. 4 element 116);

a display device having an adjustable backlight source (Aleksic, Fig. 4 element 430 and 436); and

a graphics control device coupled with the ambient light sensor, the bus and the display device, the graphics control device to modify luminance values corresponding to one or more portions of an image and backlight intensity based on the sensed ambient light level (Aleksic, Fig. 4 element 440).

Regarding **Claim 2**, Aleksic further teaches modifying the backlight intensity based on the modified color luminance values (Aleksic, Pg. 3 paragraphs [0028-0029]).

Regarding **Claims 3 and 13**, Aleksic further teaches that the modification to the backlight intensity approximately offsets the modification to the color luminance values (Aleksic, Pg. 3 paragraphs [0028-0029]).

Regarding **Claims 4 and 14**, Aleksic further teaches that determining the ambient light level comprises receiving a signal from an ambient light sensor indicating the ambient light level (Aleksic, Pg. 3 paragraphs [0028-0029]).

Regarding **Claims 7 and 17**, Aleksic further teaches wherein modifying the backlight intensity comprises modifying a pulse width modulation signal that controls backlight illumination (Aleksic, Pg. 2 paragraph 0021]).

Regarding **Claims 8 and 18**, Aleksic further teaches wherein modifying the backlight intensity comprises:

determining a hardware register value corresponding to a baseline backlight intensity value (Aleksic, Fig. 4 element 142);

applying a software generated value to the register value to generate a modified backlight intensity value (Aleksic, Fig. 4 element 440); and

using the modified backlight intensity value to cause the backlight intensity to be modified (Aleksic, Fig. 4 element 450).

Regarding **Claims 11 and 21**, Aleksic further teaches wherein the hardware register value is stored in a register within a peripheral component interconnect configuration space (Aleksic, Fig. 4 element 142).

Regarding **Claims 16**, Aleksic further teaches wherein modifying the color luminance values comprises modifying a pixel color using a graphics controller look-up table prior to passing the pixel to the display device (Aleksic, Fig. 4 elements 440 and 455, Pg. 4 paragraphs [0034-0035]).

Regarding **Claims 23 and 52**, Aleksic further teaches wherein the graphics control device modifies image brightness for one or more portions of an image to be displayed on the display device based on the sensed ambient light level and to modify the backlight intensity based on the modified image brightness (Aleksic, Fig. 4 elements 440, 450 and 455, Pg. 2 paragraph [0021] Pg. 4 paragraphs [0034-0035]).

Regarding **Claims 24 and 53**, Aleksic further teaches wherein the graphics control device modifies the backlight intensity based on the sensed ambient light level and modifies the luminance values for one or more portions of an image to be displayed on the display device based on the modified backlight intensity (Aleksic, Fig. 4 elements 440, 450 and 455, Pg. 2 paragraph [0021] Pg. 4 paragraphs [0034-0035]).

Regarding **Claims 25 and 54**, Aleksic further teaches wherein the display device comprises a flat-panel liquid crystal display (Aleksic, Pg. 4 paragraph [0031]).

Regarding **Claims 27 and 56**, Aleksic further teaches that the graphics control device comprises:

a backlight control circuit coupled with the adjustable backlight source to control the intensity of backlight provided by the adjustable backlight source (Aleksic, Fig. 4 element 440); and

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a display control circuit coupled with the ambient light sensor and the backlight control circuit to apply an adjustment to a baseline backlight including at least the sensed ambient light level to generated a modified backlight intensity signal (Aleksic, Fig. 4 element 142);

wherein the backlight control circuit causes the adjustable backlight source to provide a backlight intensity corresponding to the modified backlight intensity value (Aleksic, Fig. 4 elements 142, 440 and 450).

Regarding **Claims 28 and 57**, Aleksic further teaches that the backlight control circuit provides a pulse width modulated signal to the adjustable backlight source to control the intensity of the backlight provided by the adjustable backlight source (Aleksic, Pg. 2 paragraph 0021]).

Regarding **Claim 29 and 58**, Aleksic further teaches that the baseline backlight intensity is retrieved from a register coupled with the backlight controller (Aleksic, Fig. 4 element 142).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aleksic (US 2003/0210221) in view of Wada (US 2002/0154138).

Regarding **Claim 6**, Aleksic does not expressly teach that modifying the color luminance values comprises modifying a color look-up table. Wada teaches adjusting color brightness by modifying a color look-up table (Wada, Fig. 4, Pg. 2 paragraphs [0034-0039]). It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the method of modifying a color look-up table to adjust color luminance as taught by Wada in the device of Aleksic in order to allow the user more precise control over the color adjustment.

Claims 5, 9, 10, 15, 19, 20, 30-50, 59 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aleksic (US 2003/0210221) in view of Lin (US 6,618,045).

Regarding independent **Claim 32**, Aleksic teaches one or more processing devices (Aleksic, Fig. 4) which:

determine an ambient light level for a display device having an adjustable backlight to provide variable backlight intensity (Aleksic, Fig. 4 element 445); and

modify color luminance values corresponding to of one or more portions of an image to be displayed on the display device based on the ambient light level (Aleksic, Fig. 4 element 440, 457, and 455).

Aleksic fails to teach an article comprising a computer-readable medium having stored thereon instructions that, when executed, cause the one or more processing devices to perform the above functions.

Lin teaches that modifying color, brightness, and/or contrast can be done through any combination of software or hardware (Lin, Fig. 3, Col. 3 lines 59-63). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use a computer-readable medium having stored thereon instructions that, when executed causes the one or more processing devices to perform any function as taught by Lin instead of the hardware described by Aleksic because software implementation would provided added flexibility to the system of Aleksic.

Regarding independent **Claim 42**, Aleksic teaches one or more computing devices (Aleksic, Fig. 4) used to:

- determine an ambient light level for a display device having an adjustable backlight to provide variable backlight intensity (Aleksic, Fig. 4 element 445);

- modify the backlight intensity based on the ambient light level (Aleksic, Fig. 4 element 440); and

- modify color luminance values corresponding to or one or more portions of an image to be displayed on the display device based on the modified intensity of the adjustable backlight (Aleksic, Fig. 4 element 440 and 457).

Aleksic fails to teach an article comprising a computer-readable medium having stored thereon instructions that, when executed, cause the one or more processing devices to perform the above functions.

Lin teaches that modifying color, brightness, and/or contrast can be done through any combination of software or hardware (Lin, Fig. 3, Col. 3 lines 59-63). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use a computer-readable medium having stored thereon instructions that, when executed causes the one or more processing devices to perform any function as taught by Lin instead of the hardware described by Aleksic because software implementation would provide added flexibility to the system of Aleksic.

Regarding **Claim 33**, Aleksic in view of Lin further teaches instructions stored on the computer readable medium that, when executed, cause the one or more processing devices to modify the backlight intensity based on the modified color luminance values (Aleksic, Pg. 3 paragraphs [0028-0029]).

Regarding **Claims 34 and 43**, Aleksic in view of Lin further teaches that the modification to the backlight intensity approximately offsets the modification to the color luminance values (Aleksic, Pg. 3 paragraphs [0028-0029]).

Regarding **Claims 35 and 44**, Aleksic in view of Lin further teaches wherein the instructions that cause the one or more processing devices to determine the ambient light level comprise instructions that, when executed, cause the one or more processing

devices to receive a signal from an ambient light sensor indicating the ambient light level (Aleksic, Fig. 4 element 440).

Regarding **Claims 36 and 45**, Aleksic fails to teach instructions as claimed. Lin further teaches instructions that cause one or more processing devices to determine the ambient light level comprising instructions that, when executed, cause the one or more processing devices to receive user input (Lin, Col. 5 lines 5-33). It would have been obvious to one of ordinary skill in the art at the time of the invention to have further used the instructions as taught by Lin in the display system of Aleksic in order to allow specific adjustment as set by the user (Lin, Col. 5 lines 5-33).

Regarding **Claims 37 and 46**, Aleksic in view of Lin further teaches that the instructions that cause the one or more processing devices to modify the color luminance values comprise instructions that, when executed, cause the one or more processing devices to adjust the pixel luminance, using a color look-up table (Aleksic, Pg. 4 paragraphs [0034-0035]).

Regarding **Claims 38 and 47**, Aleksic in view of Lin further teaches that the instructions that cause one or more processing devices to modify the backlight intensity comprise instructions that, when executed, cause the one or more processing devices to modify a pulse width modulation signal that controls backlight illumination (Aleksic, Pg. 2 paragraph 0021]).

Regarding **Claims 39 and 48**, Aleksic as modified by Lin further teaches that the instructions that cause one or more processing devices to modify the backlight

intensity further comprise instructions that, when executed, cause the one or more processing devices to:

determine a hardware register value corresponding to a baseline backlight intensity value (Aleksic, Fig. 4 element 122);

apply a software generated value to the register value to generate a modified backlight intensity value (Aleksic, Fig. 4 element 440); and

use the modified backlight intensity value to cause the backlight intensity to be modified (Aleksic, Fig. 4 element 455).

Regarding **Claims 5 and 15**, Aleksic fails to teach that determining the ambient light level comprises receiving a user input. Lin teaches that determining the ambient light level comprises receiving a user input (Lin, Col. 5 lines 5-33). It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the input of Aleksic as taught by Lin in order to allow specific adjustment as set by the user (Lin, Col. 5 lines 5-33).

Regarding **Claims 9, 19, 30, 40, 49 and 59**, Aleksic fails to teach that the baseline backlight intensity value is determined based on a user provided input. Lin teaches that baseline settings can be determined based on user provided input (Lin, Col. 5 lines 34-45). It would have been obvious to one of ordinary skill in the art at the time of the invention to base the baseline backlight intensity as taught by Aleksic on a user provided input as taught by Lin in order to save power (Lin, Col. 5 lines 34-45).

Regarding **Claim 10, 20, 31, 41, 50 and 60**, Aleksic fails to teach that the baseline backlight intensity value is determined based on a power state of the display device. Lin teaches that baseline settings can be determined based a power state of the display device (Lin, Col. 5 lines 34-45). It would have been obvious to one of ordinary skill in the art at the time of the invention to base the baseline backlight intensity as taught by Aleksic on a power state of the display device as taught by Lin in order to save power (Lin, Col. 5 lines 34-45).

Claims 26 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aleksic (US 2003/0210221) in view of Kim (US 2004/0156183).

Regarding **Claims 26 and 55**, Aleksic fails to teach that the display device comprises a plasma display device. Instead Aleksic teaches a liquid crystal display device. Kim teaches plasma display devices can be interchangeable with liquid crystal devices when applying backlight technology (Kim, Pg. 5 paragraph [0086]). It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the display device of Aleksic with the plasma display device as taught by Kim because plasma display devices have higher contrast ratios.

Response to Arguments

Applicant's arguments filed August 4th, 2006 have been fully considered but they are not persuasive.

Regarding **Claims 1-4, 7, 8, 11-14, 16-18, 21-25, 27-29, 51-54 and 56-58**, the applicant argues that Aleksic fails to teach "modifying color luminance values" and "modifying color luminance values corresponding to or one or more portions of an image". The examiner respectfully disagrees. The passage that the examiner cited was simply a broad description of the invention of Aleksic however as seen throughout the rest of the reference it is clear that Aleksic clearly teaches "modifying color luminance values" and "modifying color luminance values corresponding to or one or more portions of an image" (Aleksic, Pg. 1 paragraph [0012], Pg. 3 paragraph [0029-0030]). Luminance is defined as the amount of light that passes through or is emitted from a particular area and brightness is the visual perception of a change in luminance. As such, when Aleksic changes color brightness he is in effect change color luminance in order to change the perceived brightness.

Regarding **Claim 6**, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case,

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the inventions of Aleksic and Wada need not be solving the same problem in order to be combinable. Even if the main purposes of the respective inventions are not the same, it is reasonable to combine teachings as long as there is sufficient motivation, which was clearly provided as stated in the above rejection.

Regarding **Claims 32-50**, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Further the teaching of Lin is merely brought in to teach that either software or hardware can be used for adjusting operational parameters, which is a reasonable combination when used with the device of Aleksic for adjusting backlight levels. The basic principle of operation of Aleksic is maintained. The only thing being changed is whether the adjustments of the backlight and luminance values are made in hardware or software.

Regarding **Claims 5, 9, 10, 15, 19, 20, 26, 30, 31, 55, 59 and 60**, the applicant does not provide any further arguments.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ke Xiao whose telephone number is (571) 272-7776. The examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

April 11th, 2007 - kx -


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